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NARENDRA R. THAPPETA LANDON & STARK ASSOCIATES, ONE CRYSTAL PARK SUITE 210, 2011 CRYSTAL DRIVE ARLINGTON, VA 22202			LESNIEWSKI, VICTOR D	
			ART UNIT	PAPER NUMBER
			2155	4
DATE MAILED: 06/23/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/785,884

Applicant(s)

PHADNIS ET AL.

Examiner

Victor Lesniewski

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This application has been examined.
2. Claims 1-50 are now pending.

### ***Information Disclosure Statement***

3. The IDS filed on 6/25/2001 (Paper #2) has been considered.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4, 8-10, 14-16, 21-23, 25, 29, 30, 35-40, 42, and 46-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Davis et al. (U.S. Patent Number 6,105,064), hereinafter referred to as Davis.
6. Davis has disclosed a method for controlling communications between end nodes in a packet-switched computer network. In addition to his main focus of dynamic window sizing and dynamic packet metering techniques, he has thoroughly described a network management system that supports the combination of data from several connections in a single packet. It is evident that his system is able to control session activity in a fashion similar to other network management systems. See column 9, lines 5-13.

7. Davis has disclosed:

- <Claim 1>

A method of processing a plurality of keep-alive messages generated by a corresponding plurality of end systems, each of said plurality of keep-alive messages being designed to request the status of a corresponding point to point (PPP) session implemented on a communication network, said method comprising: receiving in an aggregation device said plurality of keep-alive messages (column 9, lines 5-11); generating in said aggregation device an aggregated request packet which indicates that the status of said PPP sessions is requested (column 83, lines 26-28); and sending said aggregated request packet on said communication network to a peer aggregation device (column 49, lines 51-53).

- <Claim 2>

The method of claim 1, further comprising: receiving said aggregated request packet in said peer aggregation device (column 50, lines 60-63); indicating the status of said plurality of sessions in an aggregated reply packet (column 60, lines 45-48); and sending said aggregated reply packet to said aggregation device (column 59, lines 34-37).

- <Claim 3>

The method of claim 1, further comprising receiving in said aggregation device an aggregated reply packet from said peer aggregation device, wherein said aggregated reply packet indicates the status of at least some of said plurality of PPP sessions (column 73, lines 44-47).

- <Claim 4>

The method of claim 3, further comprising sending a proxy keep-alive reply message to one of said plurality of end systems originating a corresponding one of said keep alive-messages without waiting for said aggregated reply packet (column 60, lines 48-53).

- <Claim 8>

The method of claim 1, wherein said communication network is implemented using one of frame relay, ATM and IP networks (column 49, lines 53-55).

- <Claim 9>

The method of claim 1, wherein said aggregation device is one of a network access server and home gateway (column 8, lines 1-5).

- <Claim 10>

A method of processing an aggregated request packet in an aggregation device, wherein said aggregated request packet indicates that the status of a plurality of point-to-point sessions are requested, said method comprising: examining said aggregated request packet to determine said plurality of point-to-point sessions (column 9, lines 5-11); determining the status of each of said plurality of point-to-point sessions (column 9, lines 5-13); generating an aggregated reply packet indicating the status of said plurality of point-to-point sessions (column 60, lines 45-48); and sending said aggregated reply packet to said peer aggregation device (column 59, lines 34-37).

- <Claim 14>

The method of claim 10, wherein said aggregation device comprises one of a network access server (NAS) and a home gateway implemented in a communication network (column 8, lines 1-5).

- <Claim 15>

An aggregation device for processing a plurality of keep-alive messages generated by a corresponding plurality of end systems, each of said plurality of keep-alive messages being designed to request the status of a corresponding point to point (PPP) session implemented on a communication network, said aggregation device comprising: an input interface receiving said plurality of keep-alive messages (column 9, lines 5-11); a message aggregator coupled to said input interface, said message aggregator examining said plurality of message and generating data according to a format indicating that the status of said PPP sessions is requested (column 9, lines 5-13); and an output interface sending an aggregated request packet on said communication network to a peer aggregation device, said aggregated request packet containing said data generated by said message aggregator (column 49, lines 51-53).

- <Claim 16>

The aggregation device of claim 15, further comprising an encapsulator encapsulating said data in a packet suitable for transmission on said communication network (column 1, lines 60-67).

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- <Claim 21>

An aggregation device for processing a plurality of keep-alive messages generated by a corresponding plurality of end systems, each of said plurality of keep-alive messages being designed to request the status of a corresponding point to point (PPP) session implemented on a communication network, said aggregation device comprising: first means for receiving said plurality of keep-alive messages (column 9, lines 5-11); means for generating an aggregated request packet which indicates that the status of said PPP sessions is requested (column 83, lines 26-28); and means for sending said aggregated request packet on said communication network to a peer aggregation device (column 49, lines 51-53).

- <Claim 22>

The aggregation device of claim 21, further comprising second means for receiving an aggregated reply packet from said peer aggregation device, wherein said aggregated reply packet indicates the status of at least some of said plurality of PPP sessions (column 73, lines 44-47).

- <Claim 23>

The aggregation device of claim 22, further comprising means for sending a proxy keep-alive reply message to one of said plurality of end systems originating a corresponding one of said keep alive-messages without waiting for said aggregated reply packet (column 60, lines 48-53).

- <Claim 25>

An aggregation device for processing an aggregated request packet, wherein said aggregated request packet indicates that the status of a plurality of point-to-point sessions are requested, said aggregation device comprising: means for examining said aggregated request packet to determine said plurality of point-to-point sessions (column 9, lines 5-11); means for determining the status of each of said plurality of point-to-point sessions (column 9, lines 5-13); means for generating an aggregated reply packet indicating the status of said plurality of point-to-point sessions (column 60, lines 45-48); and means for sending said aggregated reply packet to said peer aggregation device (column 59, lines 34-37).

- <Claim 29>

The aggregation device of claim 25, wherein said aggregation device comprises one of a network access server (NAS) and a home gateway implemented in a communication network (column 8, lines 1-5).

- <Claim 30>

30. An aggregation device for processing an aggregated request packet, wherein said aggregated request packet indicates that the status of a plurality of point-to-point sessions are requested, said aggregation device comprising: an input interface receiving said aggregated request packet (column 9, lines 5-11); a de-encapsulator examining said aggregated request packet to determine that said aggregated request packet relates to requesting the status of point-to-point sessions (column 9, lines 5-11); a reply generator determining the status of each of said plurality of point-to-point sessions, and generating



an aggregated reply packet indicating the status of said plurality of point-to-point sessions (column 60, lines 45-48); and an output interface sending said aggregated reply packet to said peer aggregation device (column 59, lines 34-37).

- <Claim 35>

The aggregation device of claim 30, further comprising a keep-alive processor coupled to said de-encapsulator, wherein said keep-alive processor examines said aggregated request packet to determine that status of point-to-point sessions is requested and causes said reply generator to generate said aggregated reply packet (column 60, lines 45-48).

- <Claim 36>

The aggregation device of claim 30, wherein said aggregation device comprises one of a network access server (NAS) and a home gateway implemented in a communication network (column 8, lines 1-5).

- <Claim 37>

A computer-readable medium carrying one or more sequences of instructions for causing a aggregation device to process a plurality of keep-alive messages generated by a corresponding plurality of end systems, each of said plurality of keep-alive messages being designed to request the status of a corresponding point to point (PPP) session implemented on a communication network, wherein execution of said one or more sequences of instructions by one or more processors contained in said aggregation device causes said one or more processors to perform the actions of: receiving in an aggregation device said plurality of keep-alive messages (column 9, lines 5-11); generating in said aggregation device an aggregated request packet which indicates that the status of said

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PPP sessions is requested (column 83, lines 26-28); and sending said aggregated request packet on said communication network to a peer aggregation device (column 49, lines 51-53).

- <Claim 38>

The computer-readable medium of claim 37, further comprising: receiving said aggregated request packet in said peer aggregation device (column 50, lines 60-63); indicating the status of said plurality of sessions in an aggregated reply packet (column 60, lines 45-48); and sending said aggregated reply packet to said aggregation device (column 59, lines 34-37).

- <Claim 39>

The computer-readable medium of claim 37, further comprising receiving in said aggregation device an aggregated reply packet from said peer aggregation device, wherein said aggregated reply packet indicates the status of at least some of said plurality of PPP sessions (column 73, lines 44-47).

- <Claim 40>

The computer-readable medium of claim 39, further comprising sending a proxy keep-alive reply message to one of said plurality of end systems originating a corresponding one of said keep alive-messages without waiting for said aggregated reply packet (column 60, lines 48-53).

- <Claim 42>

A computer-readable medium carrying one or more sequences of instructions for causing an aggregation device to process an aggregated request packet, wherein said aggregated

request packet indicates that the status of a plurality of point-to-point sessions are requested, wherein execution of said one or more sequences of instructions by one or more processors contained in said aggregation device causes said one or more processors to perform the actions of: examining said aggregated request packet to determine said plurality of point-to-point sessions (column 9, lines 5-11); determining the status of each of said plurality of point-to-point sessions (column 9, lines 5-13); generating an aggregated reply packet indicating the status of said plurality of point-to-point sessions (column 60, lines 45-48); and sending said aggregated reply packet to said peer aggregation device (column 59, lines 34-37).

- <Claim 46>

The computer-readable medium of claim 42, wherein said aggregation device comprises one of a network access server (NAS) and a home gateway implemented in a communication network (column 8, lines 1-5).

- <Claim 47>

A communication network comprising: a first aggregation device receiving a plurality of keep-alive messages generated by a corresponding plurality of end systems, each of said plurality of keep-alive messages being designed to request the status of a corresponding point to point (PPP) session implemented on said communication network, said first aggregation device generating an aggregated request packet which indicates that the status of said PPP sessions is requested, and sending said aggregated request packet (column 83, lines 26-29 and column 49, lines 51-53); and a peer aggregation device receiving said aggregated request packet and indicating the status of said plurality of

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sessions in an aggregated reply packet, said peer aggregation packet sending said aggregated reply packet to said first aggregation device (column 50, lines 60-63, column 60, lines 45-48, and column 59, lines 34-37).

- <Claim 48>

The communication network of claim 47, wherein said first aggregation device is located at an edge of said communication networks (column 8, lines 28-29).

- <Claim 49>

The communication network of claim 48, further comprising an access network coupling said first aggregation device to said corresponding plurality of end systems, wherein said plurality of keep-alive messages are received on said access network (column 8, lines 1-5).

- <Claim 50>

The communication network of claim 49, wherein said first aggregation device and said peer aggregation device respectively comprise a network access server (NAS) and a home gateway (column 8, lines 1-5).

Since all the limitations of the invention as set forth in claims 1-4, 8-10, 14-16, 21-23, 25, 29, 30, 35-40, 42, and 46-50 were disclosed by Davis, claims 1-4, 8-10, 14-16, 21-23, 25, 29, 30, 35-40, 42, and 46-50 are rejected.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5-7, 11, 13, 17-19, 24, 26, 28, 31, 32, 34, 41, 43, and 45 are rejected under 35

U.S.C. 103(a) as being unpatentable over Davis, as applied above, in view of Chao et al. (U.S.

Patent Number 5,964,837), hereinafter referred to as Chao.

10. Davis disclosed a method for controlling communications between end nodes in a packet-switched computer network. In an analogous art, Chao disclosed a method of monitoring the topology of a network using dynamic switching between a polling mode and a event-monitoring mode. See Abstract. Just as Davis's system, Chao's system can be utilized in a point-to-point network environment. More specifically, Chao's system can be used in ATM networks. See column 1, lines 48-55.

11. Although Davis did not explicitly teach that his system could employ a table to track the status of sessions in the network, Chao taught a table or topology map, containing information about the operability of nodes in his system. Since the inventions encompass the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system provided by Davis by adding a status table as provided by Chao. This would make sense because it would aid a user trying to control the management of the network.

12. Thereby, the combination of Davis and Chao discloses:

- <Claim 5>

The method of claim 4, further comprising: maintaining a remote status table in said aggregation device, wherein said remote status table indicates the status of sessions

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supported by said aggregation device (Chao, column 5, lines 46-50); updating said remote status table with the information in said aggregated reply packet (Chao, column 6, lines 1-13); and generating said proxy keep-alive reply according to said remote status table (Chao, column 6, lines 55-65).

- <Claim 6>

The method of claim 5, wherein said proxy keep-alive message indicates that the corresponding session is alive/OK when a first keep-alive message is received for the corresponding session (Davis, column 79, line 58).

- <Claim 7>

The method of claim 6, further comprising initializing the status of each of said session to alive/OK such that said proxy keep-alive message in response to said first keep-alive message indicates alive/OK status (Davis, column 81, lines 8-11).

- <Claim 11>

The method of claim 10, wherein said determining comprises accessing a local status table which contains the status information of at least some of said plurality of point-to-point sessions (Chao, column 8, lines 52-58).

- <Claim 13>

The method of claim 10, wherein said generating comprises setting a bit to one logical value to indicate that a corresponding one of said plurality of sessions is OK/alive, and to another logical value to indicate that said corresponding one of said plurality of session not OK/alive (Chao, column 5, lines 50-53).

- <Claim 17>

The aggregation device of claim 16, further comprising: a remote status table indicating the status of sessions supported by said aggregation device (Chao, column 5, lines 46-50); and a de-aggregator receiving an aggregated reply packet from said peer aggregation device, wherein said aggregated reply packet indicates the status of at least some of said plurality of PPP sessions, said de-aggregator updating said remote status table with the information in said aggregated reply packet (Chao, column 6, lines 1-13).

- <Claim 18>

The aggregation device of claim 17, further comprising a proxy reply unit sending a proxy keep-alive reply message to one of said plurality of end systems originating a corresponding one of said keep alive-messages without waiting for said aggregated reply packet (Davis, column 60, lines 48-53).

- <Claim 19>

The invention of claim 18, wherein said aggregation device comprises a network access server (Davis, column 8, lines 1-5).

- <Claim 24>

The aggregation device of claim 23, further comprising: means for maintaining a remote status table in said aggregation device, wherein said remote status table indicates the status of sessions supported by said aggregation device (Chao, column 5, lines 46-50); means for updating said remote status table with the information in said aggregated reply packet (Chao, column 6, lines 1-13); and means for generating said proxy keep-alive reply according to said remote status table (Chao, column 6, lines 55-65).

- <Claim 26>

The aggregation device of claim 25, wherein said means for determining comprises means for accessing a local status table which contains the status information of at least some of said plurality of point-to-point sessions (Chao, column 8, lines 52-58).

- <Claim 28>

The aggregation device of claim 25, wherein said means for generating sets a bit in said aggregated reply packet to one logical value to indicate that a corresponding one of said plurality of sessions is OK/alive, and to another logical value to indicate that said corresponding one of said plurality of session not OK/alive (Chao, column 5, lines 50-53).

- <Claim 31>

The aggregation device of claim 30, further comprising a local status table storing the status information of at least some of said plurality of point-to-point sessions, wherein said reply generator determines the status of said at least some of said plurality of point-to-point sessions by accessing said local status table (Chao, column 8, lines 52-58).

- <Claim 32>

The aggregation device of claim 31, further comprising a session manager updating the status of said plurality of point-to-point sessions in said local status table (Chao, column 7, lines 64-66).

- <Claim 34>

The aggregation device of claim 30, wherein said reply generator sets a bit in said aggregated reply packet to one logical value to indicate that a corresponding one of said



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plurality of sessions is OK/alive, and to another logical value to indicate that said corresponding one of said plurality of session not OK/alive (Chao, column 5, lines 50-53).

- <Claim 41>

The computer-readable medium of claim 40, further comprising: maintaining a remote status table in said aggregation device, wherein said remote status table indicates the status of sessions supported by said aggregation device (Chao, column 5, lines 46-50); updating said remote status table with the information in said aggregated reply packet (Chao, column 6, lines 1-13); and generating said proxy keep-alive reply according to said remote status table (Chao, column 6, lines 55-65).

- <Claim 43>

The computer-readable medium of claim 42, wherein said determining comprises accessing a local status table which contains the status information of at least some of said plurality of point-to-point sessions (Chao, column 8, lines 52-58).

- <Claim 45>

The computer-readable medium of claim 42, wherein said generating comprises setting a bit to one logical value to indicate that a corresponding one of said plurality of sessions is OK/alive, and to another logical value to indicate that said corresponding one of said plurality of session not OK/alive (Chao, column 5, lines 50-53).

Since the combination of Davis and Chao discloses all of the above limitations, claims 5-7, 11, 13, 17-19, 24, 26, 28, 31, 32, 34, 41, 43, and 45 are rejected.

13. Claims 12, 20, 27, 33, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Davis and Chao, as applied above, in view of Simpson ("RFC 1661: Point-to-Point Protocol," July 1994).

14. The combination of Davis and Chao disclosed a method for controlling communications between end nodes in a packet-switched computer network utilizing a status table. In an analogous art, Simpson disclosed an overview of the point-to-point protocol. The point-to-point protocol is used for transporting packets between two peers and is utilized by both the system of Davis and the system of Chao.

15. Although the combination of Davis and Chao did not explicitly teach the use of a magic number associated with each session, Simpson taught a magic number for use with the point-to-point protocol. Since the inventions encompass the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the combination of Davis and Chao by adding a magic number as provided by Simpson. This would make sense because it would aid a user trying to control the management of the network.

16. Thereby, the combination of Davis, Chao, and Simpson discloses:

- <Claim 12>

The method of claim 10, wherein said generating comprises including a client magic number associated with each of said plurality of point-to-point sessions (Simpson, pages 45-47).

- <Claim 20>

The aggregation device of claim 18, wherein said aggregated request packet contains a magic number related to each of the corresponding sessions (Simpson, pages 45-47).

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- <Claim 27>

The aggregation device of claim 25, wherein said means for generating includes a client magic number associated with each of said plurality of point-to-point sessions (Simpson, pages 45-47).

- <Claim 33>

The aggregation device of claim 30, wherein said reply generator includes in said aggregated reply packet a client magic number associated with each of said plurality of point-to-point sessions (Simpson, pages 45-47).

- <Claim 44>

The computer-readable medium of claim 42, wherein said generating comprises including a client magic number associated with each of said plurality of point-to-point sessions (Simpson, pages 45-47).

Since the combination of Davis, Chao, and Simpson discloses all of the above limitations, claims 12, 20, 27, 33, and 44 are rejected.

### *Conclusion*

17. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

- Malkin et al. (U.S. Patent Number 6,311,206) disclosed a method for pushing data from one entity to another that includes monitoring a state of the client entity.

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- Justice, Jr. et al. (U.S. Patent Number 6,418,469) disclosed a management system which identifies conditions on a network by periodically polling the network devices or in response to a message from a network device.
- Hamami (U.S. Patent Number 6,717,914) disclosed a system for probing switched virtual circuits in a connection oriented network.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor Lesniewski whose telephone number is 703-308-6165.

The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 703-308-6662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Victor Lesniewski  
Patent Examiner  
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